

In the Claims:

Please cancel claims 2, 19, 24 and 25.

Please amend claims 1, 3, 7, 9 and 13 as set forth in the "Listing of Claims" below.

Please add new claims 26-29 as set forth in the "Listing of Claims" below.

LISTING OF CLAIMS

Claim 1 (Currently Amended): An insulating film-forming apparatus, comprising:
a substrate process section for applying a prescribed processing to a substrate for forming an insulating film on the substrate;
a substrate transfer section for transferring the substrate from the outside into the substrate process section; and
a substrate transfer mechanism for transferring the substrate between the substrate process section and the substrate transfer section;
wherein:
the substrate process section includes a process tower comprising plural process units housed in a housing and consisting of a plurality of process units, which are stacked one upon the other[[,]] for performing a series of processing for forming an insulating film on the substrate, said plural process units ~~process tower~~ including a coating unit for coating the substrate with a chemical liquid containing a material of the insulating film so as to form a coating film, and a heating unit for heating the substrate having the coating film formed thereon; ~~and~~
the process tower is detachable from the substrate process section,
each of the plural process units is housed in a casing,
the process tower includes a housing which has a plurality of levels for detachably accommodating the casings of the process units,
the casing of the coating unit is set in the housing at a level below the casing of the heating unit,

the casing of the heating unit and the casing of the coating unit are arranged with an air passageway interposed therebetween within the housing so as to achieve heat insulation therebetween,

an air blowing mechanism is connected to the coating unit and configured to blow air having a controlled temperature and humidity into the coating unit so as to control the temperature and humidity of the coating unit,

the casing of the coating unit is constructed to cause the air blown from the air blowing mechanism into the coating unit to be exhausted from the coating unit into the air passageway, and

the air passageway is connected to an exhaust device through an exhaust port formed on the housing of the process tower, such that the air blown from the air blowing mechanism passes through the coating unit and flows upward into the air passageway, and is then exhausted to the exhaust device through the air passageway.

Claim 2 (Canceled)

Claim 3 (Currently Amended): ~~The~~ An insulating film-forming apparatus according to ~~claim 1~~, comprising:

a substrate process section for applying a prescribed processing to a substrate for forming an insulating film on the substrate;

a substrate transfer section for transferring the substrate from the outside into the substrate process section; and

a substrate transfer mechanism for transferring the substrate between the substrate process section and the substrate transfer section;

wherein:

the substrate process section includes a process tower comprising plural process units stacked one upon the other for performing a series of processing for forming an insulating film on the substrate, said plural process units including a coating unit for coating the substrate with a

chemical liquid containing a material of the insulating film so as to form a coating film, and a heating unit for heating the substrate having the coating film formed thereon;

the process tower is detachable from the substrate process section,

further wherein:

each of the plural process units is ~~equipped~~ provided with a unit control device having its own ID number for controlling the processing of the substrate within the process unit;

the process tower is ~~equipped~~ provided with a tower control apparatus ~~that can~~ configured to be connected to the unit control devices so as to control a series of processing applied to the substrate by the plural process units arranged within the process tower; and

the tower control apparatus automatically recognizes the process unit with reference to the ID number thereof when the unit control device is connected to the tower control apparatus.

Claim 4 (Original): The insulating film-forming apparatus according to claim 3, further comprising a film thickness measuring section for measuring the thickness of the insulating film, wherein:

the tower control apparatus is constructed to control the process parameter of each of the plural process units arranged within the process tower; and

the tower control apparatus controls the process parameter of the coating unit based on the thickness, which is measured by the film thickness measuring section, of the coating film formed in the coating unit.

Claim 5 (Original): The insulating film-forming apparatus according to claim 3, further comprising a film thickness measuring section for measuring the thickness of the insulating film, wherein:

the tower control apparatus is constructed to control the process parameter of each of the plural process units arranged within the process tower; and

the tower control apparatus controls the process parameter of the heating unit based on the thickness, which is measured by the film thickness measuring section, of the insulating film processed in the heating unit.

Claim 6 (Original): The insulating film-forming apparatus according to claim 1, wherein:
the substrate transfer section includes a table on which is disposed a carrier housing a plurality of substrates;

the substrate process section includes a transfer unit on which the substrate is temporarily disposed; and

the substrate transfer mechanism includes: a first transfer device arranged in the substrate transfer section for transferring the substrate between the table and the transfer unit; and a second transfer device arranged in the substrate process section for transferring the substrate between the transfer unit and the plural process units.

Claim 7 (Currently Amended): The insulating film-forming apparatus according to claim 1, wherein the process ~~tower~~ ~~includes~~ units include a temperature control unit ~~for controlling~~ disposed between the coating unit and the heating unit and configured to control the substrate before coating with the chemical liquid at a prescribed temperature.

Claim 8 (Original): The insulating film-forming apparatus according to claim 1, wherein the substrate process section includes a plurality of process towers.

Claim 9 (Currently Amended): The insulating film-forming apparatus according to claim 8, wherein each of the plural process towers includes a plurality of process units for forming an insulating film, the plural process towers ~~form~~ forming the same kind of ~~the~~ insulating film.

Claim 10 (Original): The insulating film-forming apparatus according to claim 8, wherein at least one of the plural process towers includes a plurality of process units for forming an insulating film differing in kind from the insulating film formed in another process tower.

Claim 11 (Original): The insulating film-forming apparatus according to claim 8, wherein a first insulating film is formed on the substrate in one of the plural process towers, and a second insulating film is formed on the first insulating film in another process tower.

Claim 12 (Original): The insulating film-forming apparatus according to claim 1, comprising a plurality of substrate process sections, wherein at least one substrate process section is detachable from the other substrate process sections.

Claim 13 (Currently Amended): ~~The~~ An insulating film-forming apparatus ~~according to claim 1,~~ comprising:

a substrate process section for applying a prescribed processing to a substrate for forming an insulating film on the substrate;

a substrate transfer section for transferring the substrate from the outside into the substrate process section; and

a substrate transfer mechanism for transferring the substrate between the substrate process section and the substrate transfer section;

wherein:

the substrate process section includes a process tower comprising a plural process units stacked one upon the other for performing a series of processing for forming an insulating film on the substrate, said plural process units including a coating unit for coating the substrate with a chemical liquid containing a material of the insulating film so as to form a coating film, and a heating unit for heating the substrate having the coating film formed thereon;

wherein the substrate process section further includes a curing unit for applying a curing processing to the insulating film after the heat processing applied by the heat processing unit, and

the curing unit comprises a load-lock chamber having a substrate load port and configured to adjust an inner pressure thereof between atmospheric pressure and a vacuum, and a curing process chamber connected to the load-lock chamber and configured to perform the curing processing within a vacuum atmosphere.

Claim 14 (Original): The insulating film-forming apparatus according to claim 13, wherein the curing unit includes an electron beam irradiating mechanism for curing the insulating film by the electron beam irradiating processing.

Claim 15 (Original): The insulating film-forming apparatus according to claim 13, wherein the curing unit is arranged to constitute the uppermost section of the process tower.

Claim 16 (Original): The insulating film-forming apparatus according to claim 13, comprising a plurality of curing units that are stacked one upon the other so as to form a tower.

Claim 17 (Original): The insulating film-forming apparatus according to claim 6, further comprising a curing unit arranged in a position adjacent to the substrate process section so as to permit the substrate to be transferred into and out of the curing unit by the second substrate transfer device, said curing unit serving to apply a curing processing to the insulating film after the heat processing applied by the heating unit.

Claim 18 (Original): The insulating film-forming apparatus according to claim 17, comprising a plurality of curing units, which are arranged in a position adjacent to the substrate process section and stacked one upon the other so as to form a tower.

Claim 19 (Canceled)

Claim 20 (Original): The insulating film-forming apparatus according to claim 1, wherein the coating unit comprises:

a coating process section having a substrate holding mechanism for holding the substrate substantially horizontal, a chemical liquid supply nozzle for supplying a chemical liquid onto the substrate held by the substrate holding mechanism, and a cup surrounding the side surface of the substrate held by the substrate holding mechanism and equipped with a exhaust port of the chemical liquid formed at the bottom; and

a waste liquid recovery section arranged below the coating process section and having a waste liquid tank for storing the waste liquid exhausted from the exhaust port and with a waste liquid passageway for introducing the waste liquid exhausted from the exhaust port into the waste liquid tank.

Claim 21 (Original): The insulating film-forming apparatus according to claim 20, wherein: the waste liquid recovery section further comprises a chemical liquid tank storing the chemical liquid used in the coating process section; and the coating process section further comprises a pump for supplying the chemical liquid from the chemical liquid tank into the chemical liquid supply nozzle.

Claim 22 (Original): The insulating film-forming apparatus according to claim 20, wherein the waste liquid recovery section further comprises a chemical liquid tank storing the chemical liquid used in the coating process section, and a pump arranged sideward of the chemical liquid tank for supplying the chemical liquid from the chemical liquid tank into the chemical liquid supply nozzle.

Claim 23 (Original): The insulating film-forming apparatus according to claim 20, wherein the waste liquid recovery section further comprises a chemical liquid tank storing the chemical liquid used in the coating process section, and a pump arranged on the upper side of the

chemical liquid tank for supplying the chemical liquid from the chemical liquid tank into the chemical liquid supply nozzle.

Claims 24 and 25 (Canceled)

Claim 26 (New): The insulating film-forming apparatus according to claim 1, wherein the exhaust port is located above the casing of the heating unit.

Claim 27 (New): The insulating film-forming apparatus according to claim 1, wherein a casing containing a film thickness measuring unit configured to measure a thickness of the insulating film is set in the housing at a position between the casing of the coating unit and the casing of the heating unit, so as to achieve heat insulation therebetween.

Claim 28 (New): The insulating film-forming apparatus according to claim 3, wherein the tower control apparatus is configured such that, when a group formed of sets of a process unit and a unit control device is changed into a new group by replacing at least one of the sets with an alternative set, the tower control apparatus automatically recognizes replacement with the alternative set with reference to the ID number thereof and fabricates a process recipe used for the new group.

Claim 29 (New): The insulating film-forming apparatus according to claim 13, wherein the curing unit includes a temperature control plate configured to control a temperature of the substrate placed thereon and to transfer the substrate between the load-lock chamber and the curing process chamber.